(No Model.)

J. H. KELLOGG.

RADIANT HEAT BATH.

No. 558,394. Patented Apr. 14, 1896.

Fig 1

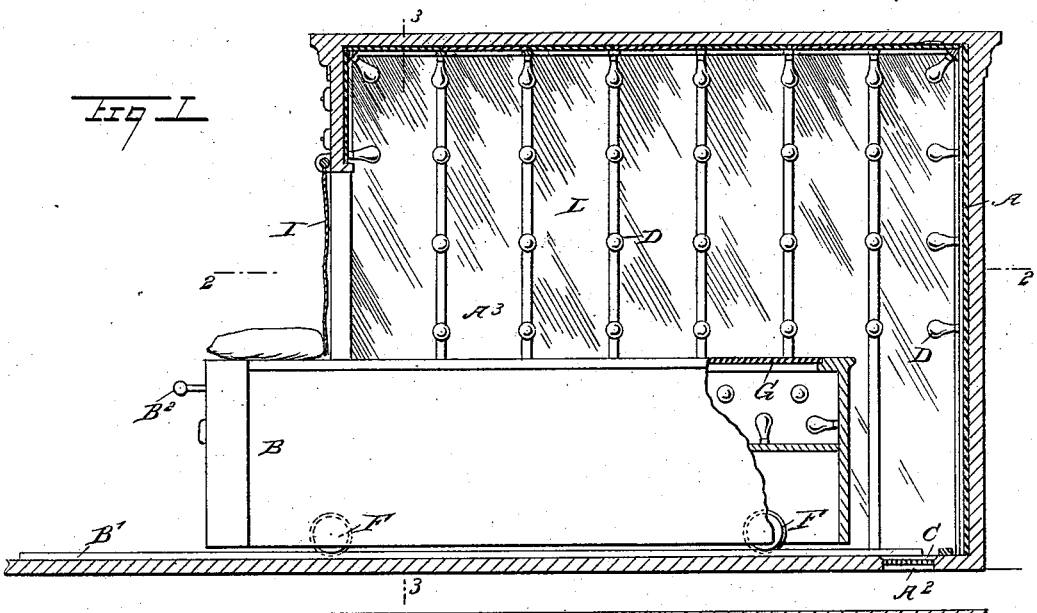


Fig 2

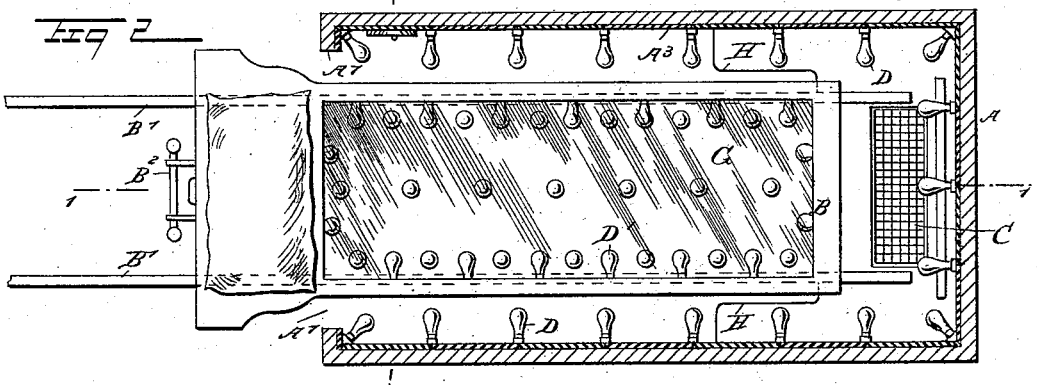
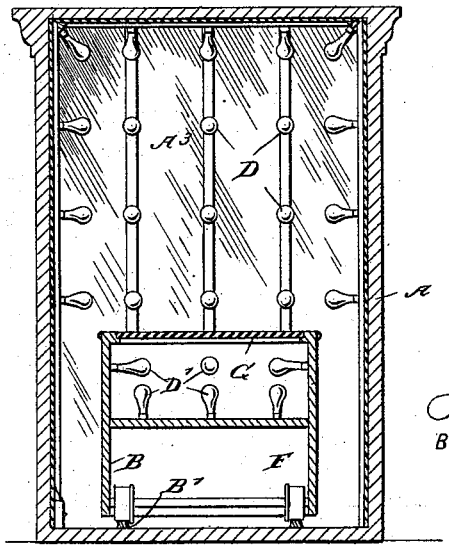


Fig 3



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JOHN HARVEY KELLOGG, OF BATTLE CREEK, MICHIGAN.

RADIANT-HEAT BATH.

SPECIFICATION forming part of Letters Patent No. 558,394, dated April 14, 1896.

Application filed May 31, 1895. Serial No. 551,193. (No model.)

To all whom it may concern:

Be it known that I, JOHN HARVEY KELLOGG, of Battle Creek, in the county of Calhoun and State of Michigan, have invented a new and Improved Radiant-Heat Bath, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and efficient device to be used as a substitute for Turkish and Russian baths, and constituting an improvement of such known devices in the several respects hereinafter fully pointed out.

I have ascertained by numerous experiments that the employment of my improved devices permits of inducing perspiration at a much lower temperature than it is possible by the use of a Turkish or Russian bath, also that my improved appliances are superior as regards the stimulation of protoplasmic activity and more powerful to promote the action of the skin and the elimination of carbonic acid.

I have devised many apparatuses for applying radiant heat to different parts of the body, or to the whole body, and as an example I have shown, in the accompanying drawings, a cabinet which permits of exposing the entire body of a person to the action of radiant heat, in accordance with my invention.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved bath-cabinet, with parts in section on the line 1 1 of Fig. 2. Fig. 2 is a sectional plan thereof, taken essentially on the line 2 2 of Fig. 1; and Fig. 3 is a cross-sectional elevation on the line 3 3 of Fig. 2.

The improved cabinet illustrated in the drawings comprises two main parts—viz., a stationary part or chamber A and a movable sliding table B, which is constructed to carry the person into or out of the cabinet. The chamber A may be given any appropriate shape, it being understood that it is provided at one end with an opening, as at A′, which permits the table B to be moved into and out of the chamber. At the bottom the chamber A is provided with tracks B′, which tracks are continued exteriorly of the chamber, as will be seen best in Fig. 2. The chamber is also provided in its bottom with an opening A^2, which may be covered with a grating C. Said opening serves for ventilation and is normally connected to any suitable device for drawing the air from the chamber, so as to continuously renew it therein.

The chamber A is provided on its inside with a series of lamps D, which, as shown, are incandescent electric lamps, preferably arranged in series of vertically-alining lamps. The electrical connections of the said lamps are not shown; but I prefer to connect therewith a switchboard in such a manner as to enable an attendant to light only part of the lamps or all of them. The said lamps are located on all sides within the chamber, and the chamber is also provided on its walls with reflecting-surfaces A^3, which are composed of mirrors. It will be understood that by these means the light from the lamps is reflected toward the center of the chamber and substantially all the light is utilized, since the light reflected from one mirror is not thrown to the outside of the chamber or to a part of the chamber which might absorb said rays of light; but if any light reflected from the mirrors should not directly reach the person who is upon the table B, said light will strike a mirror on the opposite side of the chamber, and thus, by repeated reflection, be directed again toward the center of the chamber.

The table B is constructed to run upon rollers F, which engage the tracks B′, and is provided with a handle B^2, which permits of readily sliding it into or out of the chamber A. The table is provided with a glass top G, and beneath the said glass top are located a series of electric lamps D′, and mirrors are provided beneath and back of the lamps, so as to throw their light up through the glass top on the body of the person who is lying thereon. The electrical connections are preferably made in such a manner that the lamps D′ will be lighted automatically when the table reaches its final position within the chamber A, and for this purpose contact devices, as indicated at H, may be employed within the chamber A in a manner that will be readily understood by any electrician.

In order to prevent the escape of heat from

the chamber during the application of the radiant-heat bath, I provide a curtain I, which is secured to the chamber A at the opening A′, it being understood that this curtain affords ample entrance of air for the purposes of ventilation, and also provides means whereby the head of the person, if desired, may be left outside the chamber while his body remains exposed to the action of the heat therein, as will be understood by reference to Fig. 1. The space between the inner end of the table and the adjacent end wall of the chamber allows a current of fresh air to pass from the opening A^2 upward and over the person lying on the table to the entrance. Thus a good circulation of fresh air is maintained while the treatment is in progress.

The action of my improved radiant-heat bath does not depend upon the heat which is transmitted directly by the air, as is evidenced by the fact that the curtain I need not be closed air-tight and that an ample ventilation may be carried on during the bath, and yet the heat will be sufficient to materially raise the blood heat and external heat of the person and stimulate the cutaneous activity.

I have made a series of exhaustive comparative experiments with my improved bath and Turkish and Russian baths under as nearly as possible the same conditions, and found the following results: The time required to induce perspiration with my improved radiant-heat bath was less than four minutes on an average, and the corresponding temperature of the air in the bath-chamber was about 80° Fahrenheit. In a Turkish bath the temperature required to induce perspiration was nearly 100° Fahrenheit and the time about five minutes and a half. With the Russian bath the temperature was about the same as the Turkish bath, but the time required to induce perspiration was almost seven minutes. I also found that the internal and surface temperature of the person, at the time perspiration began, was about 1° higher when using my apparatus than with a Turkish or Russian bath. As to the elimination of carbonic acid, careful measurements showed that up to five per cent. could be obtained by the use of my apparatus, while with a Turkish bath the highest percentage was 4.07 and with a Russian bath 3.96.

Another effect of my radiant-heat bath is a diminution of the amount of urea, chlorids, and solid matters contained in the urine secreted. With the Turkish and Russian bath the percentage of urea, chlorids, and solids is increased by eight to sixteen per cent. as compared with the figures obtained after the application of the radiant-heat bath. The effect, therefore, is the reverse of that obtained for the elimination of carbonic acid—that is, the radiant-heat bath is much more powerful than either the Turkish or the Russian bath as a means of stimulating the activity of the skin in eliminating carbonic acid.

I desire it to be understood that my invention is not limited to the exact construction shown in the drawings, and that various modifications may be made within the scope of the appended claims.

What I claim, and desire to secure by Letters Patent, is—

1. An apparatus for applying radiant heat for bath purposes, comprising a chamber whose walls are provided with mirrors on its vertical opposite sides and horizontal top, the mirrors being arranged to reflect light toward the center of the chamber, and lamps arranged within the chamber on the walls thereof and inclosing between them a free central space for the reception of the person, or that part of his body which is to be treated, substantially as described.

2. An improved apparatus for applying radiant heat for bath purposes, comprising a chamber having walls provided with reflectors, a series of incandescent electric lamps arranged on said walls and directed toward the center of the chamber, a table in the latter for supporting the body of the patient, a passage or opening at the front end of the chamber that permits entrance of the person, and a ventilating-opening at the rear end and in the floor of said chamber, as shown and described, whereby the fresh air admitted through such floor-opening passes upward and then rearward over the table to the entrance, as specified.

3. An apparatus for applying radiant heat for bath purposes, comprising a chamber having a peripherally-arranged series of lamps and a free central space for the reception of the person, and a sliding table for carrying the person into and out of the chamber, said sliding table being provided with a transparent top and a series of lamps below the same, substantially as described.

4. The herein-described table provided with a transparent top adapted to carry the person, and a series of lamps below the top, substantially as described.

5. The herein-described table provided with a transparent top adapted to carry the person, a series of lamps below the top, and light-directing devices to throw the light of the lamps upward through the transparent top and upon the person, substantially as described.

JOHN HARVEY KELLOGG.

Witnesses:
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